

CLAIMS

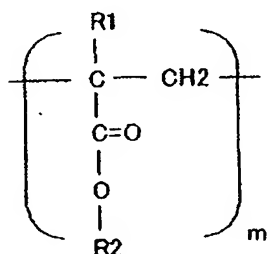
1. A method of manufacturing an ink jet head which includes a discharge port for discharging an ink droplet, an ink flow path communicated with the discharge port, and an energy generating element for discharging the ink droplet from the discharge port, the method for manufacturing an ink jet head comprising:
- 10 a process of forming a photodegradable positive type resist layer on a substrate having the energy generating element;
- a process of forming a structure which becomes the ink flow path by exposing and developing the photodegradable positive type resist layer;
- 15 a process of coating the substrate having the structure which becomes the ink flow path with a negative type resist layer;
- a process of forming the ink discharge port in the negative type resist layer; and
- 20 a process of forming the ink flow path communicated with the discharge port by removing the structure which becomes the ink flow path,
- wherein the photodegradable positive type resist layer includes an acrylic copolymer composition, the acrylic copolymer composition containing at least a unit obtained from (meta)
- 25

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acrylic ester as a main content, the acrylic copolymer composition further containing a unit obtained from (meta) acrylic acid, the acrylic copolymer composition contains the (meta) acrylic acid unit at a proportion of 5 to 30 weight%, and weight average molecular weight of the acrylic copolymer ranges from 50000 to 300000.

2. A method for manufacturing a method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic ester is expressed by General Formula (1) and the (meta) acrylic acid is expressed by General Formula (2).

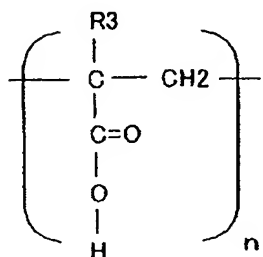
General Formula (1)



(Where R1 is a hydrogen and an alkyl group in which carbon numbers range 1 to 3, R2 is the alkyl group in which the carbon numbers ranges 1 to 3, and m is a positive integer.)

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General Formula (2)



(Where R3 is the hydrogen and the alkyl group in which carbon numbers range 1 to 3 and n is a positive integer.)

3. A method for manufacturing a method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic ester includes methacrylate ester.

4. A method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic acid is methacrylic acid.

5. A method for manufacturing an ink jet head according to claim 1, wherein the (meta) acrylic ester includes methacrylate ester, and the (meta) acrylic acid is methacrylic acid.

6. A method for manufacturing an ink jet head according to claim 1, wherein an alkaline solution is used as a developing solution in the process of forming the structure which becomes the ink flow path.

7. A method for manufacturing an ink jet head according to claim 6, wherein a developing solution

containing

(1) glycol ether having carbon numbers not lower than 6, glycol ether being able to be mixed with water at an arbitrary proportion,

- 5 (2) a nitrogen-containing basic organic solvent, and
(3) water

is used as the developing solution.

8. A method for manufacturing an ink jet head according to claim 7, wherein the glycol ether is at
10 least one kind of ethylene glycol monobutyl ether and diethylene glycol monobutyl ether.

9. A method for manufacturing an ink jet head according to claim 7, wherein the nitrogen-containing basic organic solvent is at least one kind of
15 ethanolamine and morpholine.

10. A method for manufacturing an ink jet head according to claim 1, wherein a solvent used for a coating resin mainly containing methyl isobutyl ketone and/or xylene is used in the process of
20 coating the negative type resist layer.

11. A method for manufacturing an ink jet head according to claim 1, wherein the acrylic copolymer composition contains the (meta) acrylic acid unit at a proportion of 5 to 15 weight%

25 12. An ink jet head which is manufactured by the method for manufacturing an ink jet head according to claim 1.

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